REMARKS/ARGUMENTS

At this time, Applicants take this opportunity to address several matters raised in the International Search Report.

Claim 1 has been amended in order to incorporate the subject matter of previous claim 2, which defines that the multi-dimensional data structure is defined by a first set of data items and the plurality of data sources is defined by a second set of data items. The subject matter previously found in claim 2 that the gap comprises a difference between the first set of data items and the second set of data items has also been included in claim 1.

Claim 1 has also been amended by the incorporation of the feature that the "mapping" step comprises mapping data items in the first set of data items in the multi-dimensional data structure to corresponding data items in the second set of data items in the data sources. This amendment is supported by page 18, last 3 lines from bottom of page.

The feature previously found in claim 1 of documenting the gap by determining how the gap was bridged has been deleted from claim 1. It is submitted that in view of the application as a whole, and in particular page 14, first paragraph, page 19, first paragraph and page 21, first paragraph, it would be clear that this feature is not an essential feature of the invention in its broadest form. The essence of the present method is that it allows the identification of gaps.

Independent claims 10 and 21 have been amended in a similar way to claim 1.

Previous claims 2 and 11 (which defined subject matter now incorporated in independent claims 1 and 10) are now directed to the feature that the method further comprises bridging the gap. This amendment is supported by page 14, first paragraph, last line, and at numerous other places in the description.

New claims 27 to 36 are directed to additional features that:

    1) the method further comprises documenting how the gap was bridged;

    2) the multi-dimensional data structure comprises a centralized database; and

    3) the centralised database is located at a central office.

These amendments are supported by previous claim 1; Figures 2 and 4; page 9, paragraph 2; page 13, first paragraph; and page 20, second paragraph.

Clarity

In the Written Opinion, the Examiner objected that certain features of claim 1 lacked clarity.

Data Item

It is submitted that the meaning of the term "data item" as used in the amended set of claims would be clear to a skilled person. The meaning of "data items" is defined at page 2, paragraph 2 of the present application as pieces of data that may be processed for use in reports or may be directly retrieved and used in reports.

The Examiner has already acknowledged in the Written Opinion that the meaning of the term "combination" is clear. The present application explains how combinations relate to data items. See, for example, page 18, lines 4-7, which explains how a combination relates to the linking of dimensions which define a desired data item, allowing the data item to be retrieved and processed. Thus combinations of dimensions define how data may be analysed and retrieved (see also page 26, paragraph 2 to page 27, paragraph 1 and the paragraph bridging pages 25 and 26). Thus, it is clear from the application as filed that "data items" are pieces of data that are defined by a combination of dimensions.

The nature of "data items" is even more clearly seen by the incorporation of the subject matter of claim 2 into claim 1. Thus sets of "data items" are seen to make up the multi-dimensional data structure and data sources already referred to in the claim. The data items are thus clearly pieces of data which in a set form a larger data structure and are identified individually by combinations of dimensions.

Mapping

It is submitted that the meaning of the term "mapping" as used in amended claim 1 would be clear to a skilled person. A skilled person would understand that "mapping" is used in accordance with its normal meaning as defined in the Oxford English Dictionary as "associating with each element of a set one or more elements of another set." Thus the mapping step relates to identifying a <u>correspondence</u> between particular data items in the first set with particular data items in the second set (see last two lines on page 18 of the present application, which states that data items in the target data model are mapped to corresponding data items in the source data model). It is submitted that in view of the amendment of the definition of the mapping step in amended claim 1, this feature is now fully clear.

Determining a location of a gap

The meaning of the term "a gap" has now been defined in amended claim 1 as "a

difference between a first set of data items and a second set of data items." It is therefore clear that a gap relates to a data item which is found in the multi-dimensional data structure but not in the plurality of data sources or vice versa. It is therefore submitted that this feature fulfils the requirement of clarity.

Documenting how the gap was bridged

This feature has now been removed from the independent claims. With regard to the dependent claims now including this feature, it is submitted that the meaning of this term would be clear to a skilled person in view of the application as a whole. In particular, a skilled person would understand that as determining the location of a gap involves identifying positions where required data is missing from the plurality of data sources, bridging the gap involves filling in this required data. This is explicitly explained at page 19, lines 3-4, where it is stated that "the description of how the gap will be bridged, that is how the local site or office will provide the required data, may be documented." The means by which the gap is bridged is now further defined in dependent claims 37-39.

Sufficiency

The Examiner also objected that the present application did not meet the requirements of Article 5 PCT because it was not clear how the method steps defined in the claims should be implemented on a machine.

It is submitted that the subject matter of the claims is sufficiently disclosed to enable a skilled person to carry it out. Page 7, paragraph 1 mentions that the data model development tool of the present invention may be supported by a combination of both software and hardware components. Pages 20-21 and Figure 4 in particular explain the structure of such a data model development tool (400). This passage explains that the tool may be embodied in a workstation, a server, a network of computer devices, or the like. The development tool may communicate electronically with sources 404 to 408 via the Internet, Intranet, LAN, WAN, and the like through an input/output interface 410. The tool may comprise various modules performing different functions, which may be embodied in a computer disk.

Moreover, the last few lines of page 20 of the present application explain that the development tool may use a number of commercially available database management applications, such as Microsoft Access™, as a platform. Additionally, the application explains that other normal spreadsheet applications such as Excel™, ASCII format, or other formats commonly known to those in the art may be used to upload files into the data structure (see page 9, second paragraph and page 28, first paragraph of the present

application).

Thus the present application provides ample disclosure of how the method of the invention may be implemented. The passages cited above would give a skilled person sufficient technical detail in order to perform the method. Further details of implementation would be well within the skill of an ordinary artisan.

Novelty

The Examiner requested in the Written Opinion that the difference between the subject matter of the amended set of claims and the documents cited in the Search Report should be pointed out. Briefly, it is submitted that claim 1 is novel over the prior art at least because none of the cited documents discloses the feature of claim 1 of determining a location of a gap comprising a difference between a first set of data items and a second set of data items.

WO 01/11497 A1 (D1)

This document discloses a multi-dimensional online analytical processing (MOLAP) system which can be loaded with information from a Data Warehouse (see page 5, line 13 to page 6, line 25 and page 25, lines 11-22 of D1). Data is said to be loaded through a series of batch routines, in which calculations may be performed in order to aggregate data elements and thereby fill the array structure in the database. Data may be loaded according to a "mapping scheme."

However, D1 does not disclose determining a location of a gap comprising a difference between a first set of data items and a second set of data items. D1 is not concerned with identifying the differences between a plurality of data sources and a multi-dimensional data structure in terms of the data items contained therein.

US 5937408 (D2)

This document describes a multi-dimensional record structure and a management system therefor. The management system retrieves records to be employed in the multi-dimensional record structure from a data source, such as a data file or database. Dimension values and measure values that are obtained from a data source in response to a query are mapped into the multi-dimensional record structure. The multi-dimensional structure is based on inputs provided by the system's user and certain rules (see column 4, lines 8-16 of D2).

Claim 1 is novel over D2 at least because D2 does not describe the feature of amended claim 1 of determining a location of a gap comprising a difference between a first set of data

items and a second set of data items. The method disclosed in D2 does not attempt to identify differences between the sets of data items in a multi-dimensional data structure on the one hand and in a plurality of data sources on the other hand.

US 6480842 (D3)

This document relates to a system including a method for navigating between dimensions and domains allowing for an interactive response to a query based on data stored in an online transaction processing (OLTP) database structure and data stored in an online analysis processing (OLAP) database structure. An element relater is provided that relates one or more elements of the OLTP database structure to one or more elements of the OLAP processing database structure. However, D3 does not disclose a method comprising the step of determining a location of a difference between a first set of data items and a second set of data items, as required by amended claim 1.

WO 01/50246 (D4)

D4 relates to a method that adjusts measurements during processing in a multi-dimensional data cube. However, D4 says nothing about determining a location of a gap comprising a difference between a first set of data items and a second set of data items. Therefore, amended claim 1 is novel over D4 at least because of this feature.

US 2002/0059195 A1 (D5)

This document relates to a method for performing analytical reporting on top of a multi-dimensional data model. D5 does not disclose determining the location of a difference between a first set of data items in a multi-dimensional data structure and a second set of data items in a plurality of data sources, as required by amended claim 1. Therefore, amended claim 1 is novel over D5.

Inventive Step

None of the cited prior art documents disclose a method in which differences between a first set of data items in a multi-dimensional data structure and a second set of items in a plurality of data sources are identified. The advantage of the present method is that it enables data to be mapped from a number of sources to a target structure despite differences between the target and the source data models. According to the present method, data items in the target data structure can be mapped to their corresponding items in the data sources, while non-corresponding items are identified. Identification of non-corresponding data items not only facilitates provision of the missing data items but also allows monitoring of how the missing data is provided (see pages 7 and 8 of the present application). As none of the cited

prior art documents teach toward the present invention, it is submitted that the amended set of claims involves an inventive step.

If there are any fees due in connection with the filing of this response, please charge the fees to our Deposit Account No. 50-1349.

Respectfully submitted,

Dated: June 10, 2005   By:_____

                                    Celine Jimenez Crowson
HOGAN & HARTSON LLP   Registration No. 40,357
555 13th Street, N.W.

Washington, D.C. 20004   David D. Nelson
Telephone: 202-637-5600   Registration No. 47,818
Facsimile: 202-637-5910
Customer No. 30398